

Notice of Allowability

Application No.

09/936,295

Examiner

Patricia Hightower

Applicant(s)

TOWNS ET AL.

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the communication filed September 24, 2004.
2. ☒ The allowed claim(s) is/are 1-13, 15-20, 22, 23, 25-65 and 117-130.
3. ☒ The drawings filed on 12 September 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

P. Hampton Hightower
Primary Examiner
Art Unit: 1711

Reasons For Allowance

The following is an examiner's statement of reasons for allowance:

In view of the applicants' response filed September 24, 2004 the instantly claimed ***organic polymer(s) having a plurality of regions along the length of the polymer backbone and comprising two or more of the following regions/segments, an organic polymer having a plurality of regions/segments along the length of the polymer backbone and comprising all three regions:***

(i) a ***first region for transporting negative charge carriers*** (charge transporting segment) and having a ***first bandgap defined by a first LUMO*** (lowest unoccupied molecular orbital) level ***and a first HOMO*** (highest occupied molecular orbital) level,

(ii) a ***second region for transporting positive charge carriers*** (charge transporting segment) and having a ***second bandgap defined by a second LUMO level and a second HOMO level***, and,

(iii) a ***third region (luminescent segment or region) for accepting and combining positive and negative charge carriers to generate light and having a third bandgap defined by a third LUMO level and a third HOMO level***, wherein ***each region comprises one or more monomers and the quantity and arrangement of the monomers in the organic polymer(s) is selected so that the first, second and third bandgaps are distinct from one another in the polymer***, wherein ***the polymer is a block polymer and the regions are blocks and there is no cross-linking functionality on the***

polymer and Electroluminescent device comprising an anode layer, a cathode layer and located between the anode and cathode layers, a ***layer of the claimed organic polymer having a plurality of regions(segments) along the length of the polymeric backbone having two or more distinct regions of two distinct charge transporting segments/regions together with (a third region) a separate luminescent segment/region having distinct bandgaps from one another wherein each region comprises one or more monomers and the quantity and arrangement of the monomers in the organic polymer is selected so that the first, second and third bandgaps are distinct from one another in the polymer, wherein the polymer is a block polymer having no cross-linking functionality on the polymer and the regions are blocks,*** wherein the electroluminescent device includes an emissive material which may or may not be in the third region, and the first LUMO level lies between a work function of the cathode and a LUMO level of the emissive material or which is matched to the LUMO level of the emissive material and the second HOMO level lies between a work function of the anode and a HOMO level of the emissive material or which is matched to the HOMO level of the emissive material; are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Hightower whose telephone number is (571) 272-1073. The examiner can normally be reached on M-F from 9:30 A.M. - 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

P. Hampton Hightower
P. Hampton Hightower
Primary Examiner
Art Unit 1711

P. Hightower:ph
October 14, 2004